

NOVEMBER/DECEMBER 2025

23PEMB14A — BIOINSTRUMENTATION

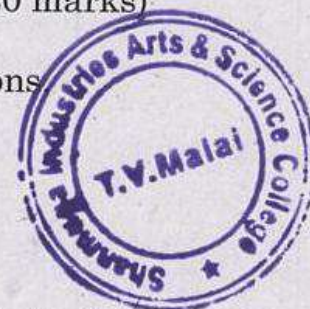
Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions

1. What is sedimentation?
2. Define Lyophilization.
3. Explain two dimensional chromatography.
4. List out the applications of chromatography.
5. What is meant by electro endomosis?
6. Define southern blotting.
7. Define spectrophotometer.
8. List out the components of spectrophotography.
9. What are isotopes?
10. Define autoradiography.



SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Explain the working mechanism of Incubator.

Or

- (b) Interpret the basic principles of centrifugation.

12. (a) Define the terms: (i) Adsorption (ii) Affinity (iii) Filtration.

Or

- (b) Interpret about chromatography.

13. (a) Summarize electrophoresis and its types and its applications.

Or

- (b) Explain the principles and applications of blotting techniques.

14. (a) Outline the principle of FTIR spectrometer.

Or

- (b) Analyze the instrumental components of NMR.

15. (a) Determine the principle and applications of autoradiography.

Or

- (b) Predict the application of tracer technology.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Estimate the principles and applications of biosafety cabinets.

17. Organise about the principles and applications of Thin Layer Chromatography.

18. How does PAGE work? Give detailed note on applications of PAGE.

19. Review the principle and components of UV Visible Spectrophotometer.

20. Construct the detailed note on detection and measurement of radioactivity.